doses. The aim of our study was to determine the ORD during TRCA performed to OP.
Methods: Prospective observational study. From January 2014 to March 2014, ORD of 5 expert operators were measured during TRCA performed to 107 patients. Operators were equipped with 4 real-time dosimeters placed at eyes level, left wrist, thorax outside the lead apron, and left inguinal region outside the lead apron. Operator effective dose (ED) was estimated using the data collected from the 4 dosimeters. Right radial access was used during all procedures and patients with prior CABG were excluded. Obesity was defined as body mass index (BMI) $\geq$ 30 kg/m2.
Results: Mean age was 72±10 years, 67(62.6%) were male and 28(26.2%) were OP. Baseline characteristics were similar in non-obese patients (NOP) and OP except BMI (26.0±2.8 vs 34.0±3.8, respectively;p< 0.001). Dose area product was higher in OP (29.0±11.6 Gycm2) than in NOP (17.2±9.0 Gycm2;p< 0.001) with similar fluoroscopy time between both groups (2.5±1.0 minutes in NOP vs 2.7±1.2 minutes in OP;p=0.315). ORD measured at eyes (3.6±3.0 μSv in NOP;6.0±3.6 μSv in OP;p=0.001), at wrist (18.2±14.9 μSv in NOP;27.5±19.0 μSv in OP;p=0.011), and at thorax level (11.2±9.3 μSv in NOP;20.2±14.4 μSv in OP;p=0.004) were higher in OP compared with NOP, without significant difference at inguinal region (35.5±26.8 μSv in NOP;47.1±32.7 μSv in OP;p=0.073). There was a positive correlation between BMI and ED (correlation coefficient 0.36;p< 0.001). During TRCA, ED was 1.8-fold higher in OP compared with NOP ([95%CI: 1.2 to 2.8], with 1.2±0.9 μSv in NOP and 1.8±1.1 μSv in OP;p=0.006).
Conclusions: TRCA in OP are accompanied with higher ORD compared with procedures in NOP. Efforts should be made to reduce ORD during TRCA, and general recommendations regarding best practice for radiological protection must be followed, with broader adoption of techniques and protection devices in addition to standard protection, particularly when performing in OP population.

TCT-837

Radiation Exposure in Right versus Left Trans-radial Approach for Coronary Procedures

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Background: Although the right trans-radial approach (R-TRA) is more popular,-being used in about 90% of trans-radial procedures worldwide, in left TRA (L-TRA) the catheter course is more similar to trans-femoral approach, thus allowing an easier negotiation of coronary ostia which, in turn, might translate into reduced fluoroscopy time and less radiation exposure. Aim of this study was to compare radiation exposure, assessed by Dose Area Product (DAP), in R-TRA versus L-TRA in a high-volume trans-radial Center.
Methods: we retrospectively selected diagnostic and interventional procedures (PCI) performed by R-TRA or L-TRA at our Center from May 2009 to May 2014. We only included in the analysis the procedures in which DAP values were available; we excluded bypass studies,which are routinely performed by L-TRA for left mammary artery angiography. Both propensity score matching and multivariate analysis were performed in order to adjust for clinical and procedural confounders.
Results: we analyzed 1464 procedures, 1175 of which performed by R-TRA (80.2%) and the remaining 289 by L-TRA (19.8%). Median DAP values were significantly higher in R-TRA as compared to L-TRA for both diagnostic and interventional procedures (4482 vs 3540 cGy.cm2and 11523 vs 10086 cGy.cm2, respectively; p< 0.05). No significant differences were observed in FT and in the amount of contrast volume (CV). In the propensity-matched cohort, consisting of 269 procedures for each group, no significant differences between R-TRA and L-TRA were observed in DAP values for both diagnostic and interventional procedures (3990 vs 3542 cGy.cm2 and 9964 vs 10216 cGy.cm2, respectively; p=ns); FT and the amount of CV were also similar. At multiple linear regression analysis, independent predictors of DAP were age, body mass index, male gender, PCI procedure, number of stents implanted, performing operator and diagnosis of acute coronary syndrome; laterality of TRA was not associated with DAP.
Conclusions: in the hands of expert, predominantly right-sided trans-radial operators, L-TRA is not associated with a reduction in the amount of radiation exposure, FT or CV as compared to R-TRA.

TCT-838

Radial access in the very elderly

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Background: Radial access (RA) for coronary interventions is being routinely used despite limitations related with physical and anatomical issues. Elderly patients have a high risk of access-site complications related to invasive coronary angiography. Our purpose was to evaluate feasibility of RA and to compare left versus right RA in very old patients.
Methods: Retrospective study of patients $\geq$80 years who underwent coronary angiography through RA at our institution. Success rate (complete procedure performed through the RA), crossover rate, fluoroscopy time, volume of contrast and type of procedure were collected.
Results: A total of 1039 patients were included (44.5% female), mean age 82.9±2.6 years (range 80-94), who underwent a RA coronary angiography. Right radial artery (RRA) was used in 913 (87.9%) and left radial artery (LRA) in 126 (12.1%). No statistically significant differences were observed in sex, body mass index (BMI) or type of procedure (diagnostic or intervention) between both groups. Primary success rate was 94.4%, and access crossover was required only in 58 patients (5.6%). No differences were observed in crossover rate when the initial approach was RRA or LRA (5.7% vs 4.7%, p=0.87), or regarding sex (male 4.8% vs female 6.5%, p=0.27) or BMI (26.7±4.5 in crossover group vs 27.7±4.5 in non-crossover group, p=0.1). Percutaneous coronary intervention (PCI) was performed in 403 patients (38.8%). Mean fluoroscopy time showed a trend to be shorter in RRA group (11.2±10 min vs 12.6±10.7 min, p=0.16), while the volume of contrast was significantly lower in the RRA group (132.4±74.4 ml vs 151.2±67.6 ml, p=0.009).
Conclusions: RA success rate was high in daily practice in patients $\geq$80 years despite physical or anatomical limitations. No differences in crossover rate were seen between RRA and LRA. However, LRA showed a statistically significant higher use of contrast volume.

TCT-839

Incidence and Predictors of Procedural Difficulty in Transradial Coronary Angiography

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Background: The incidence of procedural difficulty in trans-radial coronary angiography (TR-CA) has not been well described in the US practice, and the impact of ethnic difference has not been explored. The objective of this study is to identify the incidence and predictors of procedural difficulty in TR-CA in our diverse population.
Methods: We retrospectively reviewed consecutive 1,824 patients who underwent diagnostic coronary angiography from April 2013 to September 2013. Ad-hoc coronary intervention was performed at the discretion of the operator. Elective coronary interventions were excluded. Procedural difficulty was defined as requiring 1) access site crossover, 2) more than 2 catheters, or 3) fluoroscopy time more than 10 minutes to complete coronary angiography. Baseline clinical variables and procedure details were reviewed, and multivariate analyses were performed to determine independent predictors of procedural difficulty in TR-CA.
Results: Of the total of 1,824 patients, TR-CA accounted for 1,314 patients (72%). After excluded 78 due to missing data, 1,236 patients were included in the final analysis. Baseline characteristics were mean age of 64 years old, 58% were male, and large ethnic diversity was observed: 28% White, 28% Asian, 25% Hispanic and 18% African American. Procedural difficulty was observed in 321 patients (26.0%), of which access site crossover accounted for 82 (6.6%) and multiple catheter use or increased fluoroscopy time were observed in 239 (19.3%). On multivariate analysis, procedural difficulty was independently associated with age above 70 (odds ratio [OR] 1.44, 95% confidence interval [CI] 1.09 to 1.90; p=0.011), female gender (OR 1.38; 95% CI 1.06 to 1.80; p=0.018), hyperlipidemia (OR 1.47; 95% CI 1.12 to 1.93; p=0.006) and non-Asian ethnicity (OR 2.38; 95% CI 1.67 to 3.38; p< 0.001). Neither BMI or height were statistically significant in predicting procedural difficulty.
Conclusions: The incidence of procedural difficulty in TR-CA was 26.0%, and independent predictors were age above 70, female gender, hyperlipidemia, and non-Asian ethnicity.

Vascular Access and Intervention - Femoral (includes closure devices)

Washington Convention Center, Lower Level, Hall A

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TCT-840

Gender Specific Analysis Of The Randomized ISAR-CLOSURE Trial: The Comparison of Vascular Closure Devices Versus Manual Compression After Femoral Artery Puncture

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